HEADQUARTERS
UNITED STATES ARMY MATERIEL COMMAND
WASHINGTON, D.C. 20315

AMC REGULATION
NUMBER 700-22

18 August 1964

LOGISTICS

AMC PLANT EQUIPMENT MODERNIZATION PROGRAM

1. Purpose. This regulation establishes the U.S. Army Materiel Command (AMC) annual plant equipment modernization program, assigns program execution responsibilities, and specifies uniform procedures to be followed within AMC.

2. Scope. a. This regulation applies to:

(1) Headquarters, AMC; AMC major subordinate commands (including subordinate installations and activities); and separate installations and activities reporting directly to Headquarters, AMC.

(2) The replacement of plant equipment in active use only of the types reportable to the Defense Industrial Plant Equipment Center (DIPEC).

b. This regulation does not apply to:

(1) Plant equipment in use at depots (including depot maintenance shops), terminals, and ports that is programed and funded from the Operations

and Maintenance, Army appropriation.

(2) Special purpose equipment peculiar to research and development that is acquired under budget program 5670.

3. Definitions. a. Amortization. Recovery over a period of time of the installed cost of replacing an item of plant equipment by savings resulting from Procurement of Equipment and Missiles, Army (PEMA)-procured production.

b. Modernization. This broad term includes replacement as defined below, as well as the acquisition, by purchase or selection from the idle inventory, of equipment to replace items so worn by use they are inoperable or are incapable of holding required tolerances and are not economically repairable. Acquisition by purchase to replace inactive equipment need not be supported by DD Form 1106 (Machine Tool Replacement Analysis Work Sheet) but must be fully justified by other means.

c. Replacement. The acquisition, by purchase, of new equipment to replace existing items with more modern machines as a means of reducing production costs by increased efficiency. Each such replacement must be supported by an analysis of costs on DD Form 1106.

4. General. The objectives of the AMC plant equipment modernization program are to:

a. Reduce costs.

b. Reduce leadtime in procurement of materiel.

c. Improve the quality of the materiel to be placed in the hands of the user.

d. Maintain a program of annual replacement of inefficient equipment now used to support current programs.

e. Promote modern manufacturing methods, replace obsolete and overage equipment, and generally update active equipment.

5. Policy. Any plant equipment acquired under this regulation will be capable of having its installed acquisition cost amortized within 5 years at the annual rate of savings that will result from the PEMA-procured production in which it will be used.

a. Proposed replacements whose installed cost before capital recovery cannot reasonably be forecast for 100 percent amortization within 5 years through active use in PEMA production are to be considered an exception and will require special justification to the Deputy Chief of Staff for Logistics (DCSLOG) to show why such exceptions should be approved.

b. As a general guideline for annual budget requests and the AMC Five Year Production-Base Support Program, 5 percent of the value of the

inventory of production equipment in current use will be considered as a valid level for programing annual replacement of the active industrial equipment due to obsolescence, overage, and general updating. This criterion is for planning and is not a restriction on individual plant programing. The basic acquisition cost of inventory used for computing modernization in the annual budget request and the AMC Five Year Production-Base Support Program will not include inactive production equipment or research and development equipment. Anticipated reductions in major weapon contracts will be deducted in determining the active inventory base.

c. Army contractors will be encouraged to propose replacement of inefficient Army-owned plant equipment currently in use whenever savings will accrue and Government costs can be reduced. Completed DD Forms 1106 from contractors will be evaluated in terms of weighted factors involving:

(1) Years required for amortization through estimated production savings as shown on the DD Form 1106.

(2) Cost savings that will be realized in connection with the current contract production schedule.

(3) Costs that would have to be incurred for examination, deficiency identification, and deficiency correction of the industrial equipment being considered for replacement when production runs out in order to return such industrial equipment to Government storage in condition U or E (AR 700-34).

Note. Complete amortization over the current contract production schedule should be rare, as the contractor would obviously benefit by acquiring replacement equipment for his own account. The estimated annual rate of savings will be given equal weight with the current contract production schedule in determining plant equipment replacement priority number required by AMCR 715-33.

6. Responsibilities. a. The Director of Procurement and Production, AMC, will:

(1) Exercise management control over the AMC plant equipment modernization program.

(2) Issue guidance for the inclusion of plant equipment modernization projects in budget and apportionment requests prepared by major subordinate commands, installations and activities.

(3) Issue guidance for the preparation of mid-range plans for plant equipment modernization by the major subordinate commands, installations, activities, and the U.S. Army Production Equipment Agency (PEQUA).

b. The commander of each major subordinate command will:

(1) Develop, direct, and administer the command plant equipment modernization program in implementation of this regulation.

(2) Develop mid-range plant equipment modernization programs for Government-owned plants and private contractors scheduled to be active in PEMA-procured production of command mission materiel and forward such mid-range programs to PEQUA by 15 May each fiscal year.

(3) Prepare annual project requests for replacement of plant equipment in accordance with the approved mid-range plant equipment modernization plan for the command as published in the current AMC Five Year Production-Base Support Program.

(4) Review DD Forms 1106 prepared by subordinate installations and activities and appropriate procurement districts for plant equipment to replace equipment in active use and assign priorities in accordance with paragraph 5.

(5) Direct and control the activities of subordinate installations and activities reporting directly to him in the execution of the requirements of this regulation.

(6) Coordinate with PEQUA in the technical and engineering aspects of the planning, development, and execution of the plant equipment modernization program.

(7) When requested by Headquarters, AMC, act as the single AMC procurement command for quantity procurement of identical or similar items that are required by more than one command, installation, or activity. He will receive allotments covering other command, installation, or activity requirements and require appropriate equipment to be shipped to those commands, installations or activities; or, as may be indicated, suballot funds to another command, installation, or activity for this purpose.

(8) Amend or initiate action to amend contracts that are affected by cost reductions achieved through the purchase of plant equipment under this regulation.

c. The commander of each separate installation and activity reporting directly to Headquarters, AMC, will, for his installation or activity, carry out the responsibilities in b above. Procurement districts will forward DD Forms 1106 to appropriate commands for review, approval, and inclusion in command mid-range plant equipment modernization plans.

d. The Director of PEQUA is authorized direct communication with the commanders of major subordinate commands and separate installations and activities reporting directly to Headquarters, AMC, in the execution of his responsibilities and will:

(1) Provide technical and engineering support to major subordinate commands and other AMC installations and activities in relation to the AMC plant equipment modernization program.

(2) Analyze DD Forms 1106 received from AMC major subordinate commands, installations, and activities and forward recommendations to Headquarters, AMC.

(3) Maintain a file of DD Forms 1106 to accumulate information on kinds of plant equipment proposed to be procured and recommend a course of action to Headquarters, AMC, for centralized procurement of plant equipment.

(4) Develop annual mid-range plans for plant equipment modernization for inclusion in the AMC Five Year Production-Base Support Program; and forward such plans, including statements of policies and objectives, to the Commanding General, AMC, ATTN: AMCPP-PI, by the 5th workday in June of each fiscal year.

(5) Review and analyze performance of the plant equipment modernization program as of 30 June of each fiscal year and forward such performance analyses to the Commanding General, AMC, ATTN: AMCPP-PI; and include an analysis in depth of savings that have been realized.

7. Procedures. a. The Director of Procurement and Production, AMC, will:

(1) Review annual plant equipment modernization programs forwarded for inclusion in budget and apportionment requests for conformance with the mid-range plan for plant equipment modernization as shown in the AMC Five Year Production-Base Support Program.

(2) Prepare and forward the AMC annual budget and apportionment requests to DCSLOG, including projects for plant equipment modernization.

(3) Review annual mid-range plans for plant equipment modernization prepared by PEQUA for conformance with management guidance from the Director of Procurement and Production, AMC; review such revisions to annual mid-range plans that PEQUA may prepare or be required to prepare; and approve such annual mid-range plans, or revisions thereto, for publication in the AMC Five Year

b. The commander of each major subordinate command will:

(1) Develop, direct, and administer the command plant equipment modernization program in implementation of this regulation.

(2) Develop mid-range plant equipment modernization programs for Government-owned plants and private contractors scheduled to be active in PEMA-procured production of command mission materiel and forward such mid-range programs to PEQUA by 15 May each fiscal year.

(3) Prepare annual project requests for replacement of plant equipment in accordance with the approved mid-range plant equipment modernization plan for the command as published in the current AMC Five Year Production-Base Support Program.

(4) Review DD Forms 1106 prepared by subordinate installations and activities and appropriate procurement districts for plant equipment to replace equipment in active use and assign priorities in accordance with paragraph 5.

(5) Direct and control the activities of subordinate installations and activities reporting directly to him in the execution of the requirements of this regulation.

(6) Coordinate with PEQUA in the technical and engineering aspects of the planning, development, and execution of the plant equipment modernization program.

(7) When requested by Headquarters, AMC, act as the single AMC procurement command for quantity procurement of identical or similar items that are required by more than one command, installation, or activity. He will receive allotments covering other command, installation, or activity requirements and require appropriate equipment to be shipped to those commands, installations or activities; or, as may be indicated, suballot funds to another command, installation, or activity for this purpose.

(8) Amend or initiate action to amend contracts that are affected by cost reductions achieved through the purchase of plant equipment under this regulation.

c. The commander of each separate installation and activity reporting directly to Headquarters, AMC, will, for his installation or activity, carry out the responsibilities in b above. Procurement districts will forward DD Forms 1106 to appropriate commands for review, approval, and inclusion in command mid-range plant equipment modernization plans.

d. The Director of PEQUA is authorized direct communication with the commanders of major subordinate commands and separate installations and activities reporting directly to Headquarters, AMC, in the execution of his responsibilities and will:

(1) Provide technical and engineering support to major subordinate commands and other AMC installations and activities in relation to the AMC plant equipment modernization program.

(2) Analyze DD Forms 1106 received from AMC major subordinate commands, installations, and activities and forward recommendations to Headquarters, AMC.

(3) Maintain a file of DD Forms 1106 to accumulate information on kinds of plant equipment proposed to be procured and recommend a course of action to Headquarters, AMC, for centralized procurement of plant equipment.

(4) Develop annual mid-range plans for plant equipment modernization for inclusion in the AMC Five Year Production-Base Support Program; and forward such plans, including statements of policies and objectives, to the Commanding General, AMC, ATTN: AMCPP-PI, by the 5th workday in June of each fiscal year.

(5) Review and analyze performance of the plant equipment modernization program as of 30 June of each fiscal year and forward such performance analyses to the Commanding General, AMC, ATTN: AMCPP-PI; and include an analysis in depth of savings that have been realized.

7. Procedures. a. The Director of Procurement and Production, AMC, will:

(1) Review annual plant equipment modernization programs forwarded for inclusion in budget and apportionment requests for conformance with the mid-range plan for plant equipment modernization as shown in the AMC Five Year Production-Base Support Program.

(2) Prepare and forward the AMC annual budget and apportionment requests to DCSLOG, including projects for plant equipment modernization.

(3) Review annual mid-range plans for plant equipment modernization prepared by PEQUA for conformance with management guidance from the Director of Procurement and Production, AMC; review such revisions to annual mid-range plans that PEQUA may prepare or be required to prepare; and approve such annual mid-range plans, or revisions thereto, for publication in the AMC Five Year

Production-Base Support Program.

(4) Notify commands, installations, activities, and PEQUA of the plant equipment modernization projects that have been accepted by DCSLOG for inclusion in Department of the Army budgets and apportionment requests.

(5) Notify commands, installations, activities, and PEQUA of plant equipment modernization projects that have been approved by the Assistant Secretary of the Army for Logistics for inclusion in the current year program.

(6) Obtain release to major subordinate commands, installations, and activities of projects approved for execution by the Director of Materiel Readiness, AMC.

(7) Review all individual projects forwarded for current program year funding after conclusion of the apportionment exercise, taking appropriate approval or disapproval action in accordance with delegated authority.

(8) Review the annual performance analysis forwarded by PEQUA and act to correct deficiencies noted.

b. The commander of each major subordinate command will:

(1) Develop command program procedures in accordance with this regulation, and disseminate them to subordinate installations and activities and procurement districts for action. These procedures will:

(a) Provide for complete and continuous review by each subordinate installation and activity of plant equipment in active use and by procurement districts of contractor-utilized plant equipment, to identify equipment that should be replaced and plan for its orderly replacement.

(b) Provide for annual replacement of in-use plant equipment under command control (as reported to the Defense Supply Agency (DSA)/DIPEC). Appendix I contains a listing for each major subordinate command, and for all separate installations and activities reporting directly to Headquarters, AMC, of the number of items and acquisition cost of plant equipment in active use reported to DIPEC. The total acquisition cost listed in appendix I will be used to determine the annual dollar replacement figure (5 percent of the total acquisition cost) that is the maximum program authorized to be submitted by AMC in any one year under the plant equipment replacement program. Industrial plant equipment proposed for replacement will be rated on an AMC-wide basis in order to arrive at recommended priorities for funding.

(2) Develop command plant equipment modernization programs for submission to Headquarters, AMC, for budget and apportionment requests in

accordance with the AMC Five Year Production-Base Support Program.

(3) Review the command mid-range plant equipment modernization program on a continuing basis and forward revisions thereof to PEQUA as changes in planning occur.

(4) Obtain information for replacement of specific items of plant equipment from subordinate installations and activities and procurement districts to use in developing the mid-range plan for plant equipment modernization to be forwarded to PEQUA.

(a) Identify in annual project requests the individual items of plant equipment that are to be replaced during the fiscal year and items proposed to be procured for the replacement. Project requests will be prepared and forwarded in accordance with AMCR 715-33.

(b) Receive DD Forms 1106 prepared by subordinate installations and activities and procurement districts as detailed in appendix II for each item of plant equipment to replace equipment in active use. One copy of the DD Form 1106 will be forwarded to PEQUA after it is accepted by the command. The command may request PEQUA to assist in review of DD Forms 1106. DD Forms 1106 will be attached to the project request forwarded to Headquarters, AMC, for approval.

(c) Report to DSA/DIPEC as excess, immediately upon replacement, those plant equipment items that are replaced, except those that were identified for trade-in and that may be exempt from reporting as excess under the Armed Services Procurement Regulation or Army regulations.

(5) Before procurement of any plant equipment, forward an original and two copies of DD Form 1419 (Production Equipment Non-availability Certificate) for each item to be procured to DIPEC for screening action. A certificate of nonavailability from DIPEC is required before procurement action can be initiated. DD Form 1419, when submitted to DIPEC, will clearly identify in Item 6, Description, that "This item is planned for procurement under the AMC Plant Equipment Program, funds are available, and productivity increase of replacement item should be (insert factor from item 6f, DD Form 1106)." Supplies of DD Form 1419 will be requisitioned from Letterkenny Army Depot, Chambersburg, Pa.

(6) After the first year of use of plant equipment purchased under this regulation, the net operating savings (identified with the analysis number of the DD Form 1106 originally approved) will be forwarded to

PEQUA. When the actual cost reduction is less than 85 percent of the projected savings a detailed explanation of the reason for the deviation is required. This reporting has been determined exempt from reports control by the AMC Reports Control Officer under paragraph 39o, AR 335-15.

c. The commander of each procurement district, with respect to contractor-utilized plant equipment, will:

(1) Annually review, plan, and establish plant equipment modernization program requirements and provide necessary support to each major subordinate command.

(2) Coordinate with PEQUA the technical and engineering aspects of planning, development, and execution of the plant equipment modernization program.

d. The commander of each separate installation and activity reporting directly to Headquarters, AMC, will comply with b above, as appropriate, in carrying out his responsibilities for development and operation of his plant equipment modernization program.

e. The Director of PEQUA will:

(1) Provide technical and engineering support to major subordinate commands and separate installations and activities reporting directly to Headquarters, AMC, to assist them to plan, develop, and execute their plant equipment modernization program, including development of criteria for plant equipment replacement, preparation of DD Forms 1106, and other justification of project requests; and provide information and technical and engineering analyses relative to the availability of new products in the plant equipment manufacturing industry and the sufficiency of design and operating capability of those products.

(2) Accumulate information on new products of the plant equipment manufacturing industry to analyze and evaluate design and operating capability of these new products in relation to AMC plant equipment requirements. Results of analyses will be compiled and made available to all AMC major subordinate commands and other installations and activities.

(3) Accumulate DD Forms 1106 and conduct such studies as may be required to determine the feasibility of quantity procurement of various kinds of plant equipment. In circumstances where more than one command and/or separate installation or activity intends to procure identical or similar items, PEQUA will recommend procurement of these items by one command to take advantage of any savings that might accrue through quantity procurement. Headquarters, AMC, will designate the command, installation, or activity that will procure the items. The other commands involved will suballot to the selected command sufficient funds to cover their requirements.

Appendix I

LISTING OF AMC-CONTROLLED PLANT EQUIPMENT
BY REPLACEMENT VALUE

1. Plant equipment in active use by AMC major subordinate commands and separate installations and activities reporting directly to Headquarters, AMC, as of 30 June 1964.

Major subordinate commands	Number of items	Acquisition cost
U.S. Army Mobility Command	18,224	$154,961,866
U.S. Army Missile Command	20,599	113,380,465
U.S. Army Weapons Command	16,219	142,360,108
U.S. Army Munitions Command	35,522	264,875,610
U.S. Army Electronics Command	8,368	30,738,709
U.S. Army Test and Evaluation Command	7,092	29,438,485
U.S. Army Supply and Maintenance Command	10,375	42,818,849
Separate installations and activities	393	2,091,415
TOTAL		$780,665,507

2. This listing will be revised as of 30 June each year and forwarded to the major subordinate commands and separate installations and activities reporting directly to Headquarters, AMC.

Appendix II

INSTRUCTIONS FOR THE PREPARATION OF
MACHINE TOOL REPLACEMENT ANALYSIS WORK SHEET (DD FORM 1106)

Part 1

PREPARATION OF DD FORM 1106

1. General. The preparation of this form applies to any plant equipment proposed for acquisition to replace equipment in active use. Supplies of DD Form 1106 will be requisitioned from Letterkenny Army Depot, Chambersburg, Pa.

2. Preparation. Prepare DD Form 1106 by typewriter. Supplemental sheets will be used to set forth supporting details and attached to the form. The form will be prepared as follows:

a. Heading.

(1) ANALYSIS NUMBER. Machine Tool Replacement Analysis Work Sheets (DD Form 1106) will be numbered so as to consist of two elements, separated by a dash (-), in accordance with the following:

(a) Location. A six-digit code representing the location at which the proposed item for replacement will be located (same as the last six digits of the possessor code recorded on DD Form 1342 (DOD Property Record Card)).

(b) Analysis Number. This number is assigned the analysis sheet consecutively for each Government-owned facility, contractor-operated facility, or contractor plant. A four-digit number beginning with 0001 will be used. A new number, in ascending sequence, will be assigned to each subsequent replacement proposal. Revisions involving an original analysis work sheet (DD Form 1106) are to be identified by the suffix "Rev. 1," "Rev. 2," etc.

EXAMPLES: 469234-0001
469234-0001, Rev. 1.

(2) DATE. Record the day, month, and year in which the analysis is prepared or revised.

b. Numbered items.

(1) Item 1, ACTIVITY. The name of the military or contractor facility where "present equipment" is being used.

(2) Item 2, LOCATION. The street, city, and State where "present equipment" is being used.

(3) Item 3, SHOP. The shop number, cost center, or organizational segment, as applicable, where "present equipment" is being used.

(4) Item 4, BUILDING NO. The building number (if applicable) where "present equipment" is located.

(5) Item 5, PRESENT EQUIPMENT. (Note. If a group of plant equipment items are involved, generally describe and refer to supporting work sheets.)

(a) DESCRIPTION. Copy verbatim the noun description given in the appropriate Production Equipment Directory (D1 Metalworking Machinery, D2 Welding, Heat Cutting and Metallizing Equipment, and subsequent directories as issued).

(b) MANUFACTURER. The name of the original manufacturer of the "present equipment."

(c) MODEL NO. The original manufacturer's model designation if one has been assigned. If equipment is special, designate "SPEC." If single purpose, designate "SGL."

(d) PRODUCTION EQUIPMENT CODE. The twelve-digit numerical code assigned in the appropriate Production Equipment Directory.

(e) DEPARTMENTAL NO. The Department of the Army identification number consists of the first 4 digits of the Production Equipment Code (PEC) followed by a dash (-), and the 5-digit Log Number assigned by DIPEC. (Recorded on DD Form 1342.)

(f) YEAR BUILT. The year the present equipment was originally built.

(g) TOTAL ACQUISITION COST. Indicate to the nearest dollar the acquisition cost, including permanently assigned accessories and attachments, and shipping and installation costs. Multiple replacement proposals (systems, etc) will reflect the total acquisition cost as contained on the supporting work sheets.

(h) QUANTITY. The number of "present equipment" items involved in the analysis.

(6) Item 6, PROPOSED EQUIPMENT.

(a) DESCRIPTION. Enter the complete detailed descriptive data and capacities which adequately describe the proposed equipment. Include any special features, horsepower, essential attachments, and accessories which have been determined to be the best alternative to present equipment. Proposed equipment representing the best alternative to present equipment in the form of the latest and most modern item may not be included in the Production Equipment Directories. In such instances, the description must be sufficient to identify the major group, class, subclass, type, subtype, primary size group, secondary size group, and specific size. A copy of a brochure or pamphlet describing proposed equipment will be included when available.

(b) MANUFACTURER. The name of the manufacturer of the "proposed equipment."

(c) MODEL NO. The model number assigned by manufacturer of proposed equipment, if available. If the equipment is special, designate "SPEC." If single purpose, designate "SGL."

(d) PRODUCTION EQUIPMENT CODE. The twelve-digit numerical code assigned in appropriate Production Equipment Directory, if available. Proposed equipment for which no PEC number has been assigned may be coded to the sixth digit according to major group class or subclass, appearing in Table of Service Lives, Part 2 of this appendix.

(e) QUANTITY. The number of "proposed equipment" items involved in the analysis.

(f) PRODUCTIVITY INCREASE RATIO. The increased productive capacity ratio which will reflect the comparison of the rate of production or improved operating efficiency of the "proposed equipment" to that of the "present equipment." This figure should be developed through engineering studies and estimated production potential from the equipment manufacturers.

(7) Item 7, OPERATING COST ANALYSIS FOR EQUIVALENT OUTPUT (NEXT YEAR). (The following factors will be considered and answers applied to columns a and b where applicable:)

(a) WORK LOAD (HOURS NEXT YEAR). The number of hours, based on the known and anticipated work load, that the "present equipment" will be used during the next twelve months following the date of the analysis (Column a); and the number of hours the "proposed equipment" will be used during the next twelve months following the date of the analysis for equivalent production output (Column b). These hours will be in direct proportion to the productivity increase ratio (6f) of the "proposed equipment" to the "present equipment," i.e., if the "present

equipment" will be used for 1800 hours for certain production output during the next twelve months and the productivity increase ratio (6f) is 3:1, then the machine load for the "proposed equipment" will be 1800 ÷ 3 = 600 hours.

(b) DIRECT LABOR. The wages of the operator or operators (including helper, if applicable) for the number of hours shown in (7)(a) above.

(c) INDIRECT LABOR. The costs applicable to overhead expenses, which include but need not be limited to, administration, supervision, inspection, janitorial services, safety and training, shift premiums, bonuses, etc. This is usually a set ratio or percentage of direct labor charges.

(d) FRINGE BENEFITS. The costs which include, but need not be limited to, annual, sick, holiday, and military leave; allowance for protective clothing, etc. This is usually expressed as a percentage of direct labor. Approximately 16 percent would be a figure that would represent the minimum applicable to Government-operated installations.

(e) MAINTENANCE. The estimated costs of ordinary operational maintenance and repair for the next 12-month period. It does not include costs for major overhaul or rebuilding. When major overhaul or rebuilding of present equipment is contemplated, this will be the subject of a complete analysis comparing the present equipment as is against rebuilding it, and further comparing the results of this analysis with an analysis of the present equipment against procuring new equipment.

(f) POWER. The cost of power consumed (if applicable). This may be obtained by multiplying the factor of cost per kilowatt-hour by the number of hours in 7a multiplied by the kilowatts of the applicable equipment. In the case of equipment which is powered by other than electricity, such as a gas-fired furnace, a comparable computation should be used.

(g) SCRAP/REWORK. The costs of material and labor (including direct, indirect, and fringe benefits) for parts scrapped or in need of rework when the cause of the spoilage is due to the inefficiency of the equipment. Do not include these costs of spoilage if due to the fault of the operator.

(h) TOOLING. If there are any signi
between the present and proposed equipment in the c
jigs and fixtures, cutting tools, attachments, and

which are not considered a part of the basic equipment, these differences should be taken into consideration. Do not include attachments, accessories, or fixtures which are considered a permanent part of the equipment and are included in capital costs. Consumable items such as cutting tools, abrasive wheels, etc., which are normally required on both present and proposed equipment, will not be considered unless the difference in quantities or value is significant.

(i) SAVINGS/OTHER OPERATIONS, ASSEMBLY. The dollar savings resulting from elimination or reduction of subsequent operations, reduction in inspection time, reduced assembly time, etc. For example, if due to better accuracy of the proposed equipment, less time is spent in the assembly of parts, these savings should be reflected as a cost against the present equipment.

(j) OTHER COSTS. Any other costs or savings which would contribute to the completeness of the analysis. For example, savings in floor space should be reflected if this is a critical item.

(k) TOTAL OPERATING COSTS. The sum of figures entered in 7b through 7j.

(l) NET OPERATING COSTS FAVORING PROPOSED EQUIPMENT. The result of subtracting the total in line 7k, column b, from 7k, column a.

(8) Item 8, CAPITAL COST ANALYSIS OF PROPOSED EQUIPMENT (NEXT YEAR).

(a) ACQUISITION COST. The acquisition cost of the proposed equipment including all attachments, accessories, and related items.

(b) INSTALLATION, TRANSPORTATION AND MISCELLANEOUS COSTS. The cost for transportation, installation, and any miscellaneous cost of preparing the proposed equipment for operation.

(c) TOTAL INSTALLED COST. The result of adding 8a and 8b.

(d) CURRENT DISPOSAL VALUE OF PRESENT EQUIPMENT. The value of the "present equipment" if offered to the used equipment market now. It is intended that this figure will reflect the greatest amount of money which can be realized for the disposal of the present equipment.

(e) NET REQUIRED INVESTMENT. This figure is obtained by subtracting 8d from 8c.

(f). SERVICE LIFE. The service life of the proposed equipment for purposes of these analyses will be obtained from part 2 of this appendix. There will be no deviation from these service lives. If the proposed equipment is not covered in part 2 of this appendix, the service life will be requested from the Defense Industrial Plant Equipment Center.

(g). CHART PERCENT. This percentage will be obtained from part 3 of this appendix by selecting the percent indicated opposite the service life of 8f above. For example, 18 years service life equals 12.7 percent.

(h). TOTAL CAPITAL COST. This figure is obtained by multiplying the net required investment (8e) by the chart percent(8g).

(9) Item 9, NEXT YEAR'S SAVINGS FROM REPLACEMENT. This figure is obtained by subtracting the total capital cost (8h) from the net operating cost favoring the proposed equipment (71).

Part 2

TABLE OF SERVICE LIFE YEARS
AND CHART PERCENT

PEC No. 3411
BORING MACHINES

		SVC LIFE YRS	CHART %
Boring, Drilling & Milling Machines, Horizontal			
3411-11	Table Type	15	14.7
3411-12	Rotary Table Type, Built in Table		
3411-13	Floor Type		
3411-14	Planer Type		
3411-16	Horizontal Opposed Spindles		
3411-19	Miscellaneous		
Boring & Turning Machine, Vertical (Including Vertical Turret Lathes)			
3411-21	Standard or Turret Type	18	12.7
3411-24	Extension Type		
3411-25	Fixed Rail Type		
3411-26	Automatic, Single or Multi-Slide		
3411-29	Miscellaneous		
Boring Machines, Precision			
3411-31	Horizontal Bridge Type, Single Bed	11	18.9
3411-32	Horizontal Bridge Type, Double End		
3411-35	Horizontal, Knee Type		
3411-36	Vertical Type (Excludes Unit Type Head, 3419-96)		
3411-37	Boring, Drilling & Milling, Vertical (Excluding Jig Boring Machines)		
3411-39	Miscellaneous		
Jig Boring Machines			
3411-41	Horizontal	11	18.9
3411-42	Vertical		
Cylinder Boring, Car Wheel; Oil Groover			
3411-51	Horizontal, Cylinder Boring (Including Horiz Cylinder Boring & Facing Machines)	14	15.5
3411-52	Horizontal, Floor Type, Fixed Head		

PEC No. 3411
BORING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Cylinder Boring, Car Wheel; Oil Groover (Cont)			
3411-54	Vertical, Multiple Spindle, Rail Type, Cylinder	14	15.5
3411-56	Vertical, Car Wheel Type		
3411-57	Angular or V-Type (Double End) Multiple Spindle, Cylinder		
3411-58	Oil Groovers		
Horizontal, Center Drive			
3411-61	Single End	13	16.5
3411-62	Double End, Contour		
3411-69	Miscellaneous		
Boring & Drilling Machine			
3411-71	Horizontal, Floor Type	13	16.5
3411-90	Miscellaneous		
3411-99	Boring Machines (Not Elsewhere Classified)		

PEC No. 3412
BROACHING MACHINES

Hydraulic, Horizontal			
3412-11	Internal, Single Ram (Includes Combination Internal & Surface)	11	18.9
3412-14	Surface, Single Ram		
Hydraulic, Vertical, Internal			
3412-21	Pull Down Type	11	18.9
3412-22	Pull Up Type		
Hydraulic, Vertical, Surface (Including Combination Surface & Internal)			
3412-31	Single Ram	11	18.9
3412-32	Double Ram		
3412-33	Combination Surface & Internal (Includes Push-Pull)		

PEC No. 3412
BROACHING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Circular Cutter, Surface			
3412-41	Hydraulic	11	18.9
Mechanical Drive			
3412-51	Horizontal, Surface, Single Ram	11	18.9
3412-53	Vertical, Surface and/or Internal, Single Ram		
3412-54	Vertical, Surface, Twin Ram		
3412-55	Horizontal, Surface, Continuous (Excludes Rotary Type)		
3412-56	Vertical, Surface, Continuous (Excludes Rotary Type)		
3412-60	Pneumatic (Includes Self-Contained)		
3412-91	Convertible, Horizontal, Vertical, Internal		

PEC No. 3413
DRILLING MACHINES

Sensitive, Bench			
3413-11	Box Column	12	17.6
3413-12	Round Column		
3413-13	Indexing, Turret Head		
3413-19	Miscellaneous		
Sensitive, Floor and Pedestal			
3413-21	Box Column	12	17.6
3413-22	Round Column		
3413-29	Miscellaneous		
Upright			
3413-31	Box Column (Standard)	13	16.5
3413-32	Round Column (Standard)		
3413-33	Heavy Manufacturing		
3413-34	Indexing, Turret Head		
3413-35	Layout (Compound Table, Includes Drilling and Boring)		
3413-39	Miscellaneous		

PEC No. 3413
DRILLING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Radial (Includes Bed & Track Traversing Types)			
3413-41	Plain	15	14.7
3413-42	Universal		
3413-44	Sensitive, Floor Type		
3413-45	Horizontal Spindle (Stationary or Ram Type Head)		
3413-46	Wall Type (Including Jack Knife)		
3413-47	Bench & Floor Type, Folding Arm or Sliding Arm (Including Jack Knife)		
3413-49	Miscellaneous		
Multiple Spindle (Cluster of Spindles Driven From One Central Power Unit)			
3413-51	Sensitive, Adjustable Joint	14	15.5
3413-52	Standard, Adjustable Joint		
3413-53	Fixed Center		
3413-54	Rail Type (Including Individual Power Driven Spindles)		
3419-59	Miscellaneous		
Automatic			
3413-61	Horizontal, Opposed Spindle (Except Centering Machines 3419-91)	14	15.5
3413-69	Miscellaneous		
Deep Hole			
3413-81	Horizontal	18	12.7
3413-82	Vertical		
Drilling Machines, Miscellaneous			
3413-91	Vertical, Inverted Spindle	14	15.5
3413-92	Back Spot Facing		
3413-93	Standard Drilling Heads Mounted for Special Purpose		
3413-94	Wall Type & Post Type (Not including Radial)		
3413-99	Drilling Machines (Not Elsewhere Classified)		

PEC No. 3414
GEAR CUTTING AND FINISHING MACHINES

		SVC LIFE YRS	CHART %
Gear Hobbing Machines			
3414-11	Horizontal, Standard	13	16.5
3414-13	Vertical, Plain		
3414-14	Vertical, Universal		
3414-15	Vertical, Cone Type		
3414-17	Vertical, Rotary		
3414-18	Worm Gear, Straight		
Gear Shapers			
3414-21	Spur, External & Internal	13	16.5
3414-24	Spur & Helical, External & Internal		
3414-25	Spur & Helical, External Only		
3414-27	Spur & Helical, Continuous Herringbone		
3414-29	Miscellaneous		
Gear Cutting Machine, Form Milling Type			
3414-31	Spur, Single Spindle	13	16.5
3414-32	Spur & Rough Bevel, Single Spindle		
3414-33	Spur, Multiple Spindle		
3414-34	Spur & Rough Bevel, Multiple Spindle		
3414-35	Rough Bevel, Multiple Spindle		
Gear Cutting Machine, Bevel (Not Including Planer Type)			
3414-41	Straight Bevel	13	16.5
3414-43	Spiral Bevel and Hypoid		
Gear Cutting Machine, Planer Type			
3414-51	Bevel	13	16.5
3414-52	Bevel and Spur		
Gear Cutting Machines, Miscellaneous			
3414-61	Hourglass Generators	13	16.5
3414-62	Rack Cutters, Form Milling Type		
3414-63	Threading Machine, Generating Type, Worm & Thread		
3414-64	Curvic Coupling Cutting Machine		

PEC No. 3414
GEAR CUTTING AND FINISHING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Gear Tooth Finishing Machines			
3414-71	Gear Tooth Grinding	13	16.5
3414-72	Gear Tooth Lapping and/or Honing		
3414-73	Gear Tooth Shaving		
3414-74	Gear Tooth Burnishing		
3414-75	Gear Tooth Chamfering and/or Burring		
3414-76	Gear Tooth Pointing and/or Chamfering		
3414-78	Combination Gear Tooth Chamfering, Rounding & Pointing		
Gear and/or Spline Rolling Machine			
3414-81	Rack Type	13	16.5
3414-82	Roller Type		

PEC No. 3415
GRINDING MACHINES

External, Cylindrical			
3415-11	Plain, Standard	13	16.5
3415-12	Plain, Raised		
3415-13	Universal		
3415-14	Roll, Traveling Table Type		
3415-15	Roll, Traveling Wheel Head Type		
3415-16	Plain, Automatic In-Feed		
3415-17	Centerless		
3415-18	Special		
3415-19	Miscellaneous		
Internal, Cylindrical (Grinding Stroke is Maximum Length of Hole Ground)			
3415-21	Hand Feed	13	16.5
3415-22	Mechanical Power Feed		
3415-23	Hydraulic Power Feed		
3415-24	Automatic Sizing		
3415-25	Combination Internal and Pace		
3415-26	Planetary		
3415-27	Centerless		
3415-28	Full Automatic		
3415-29	Miscellaneous		

PEC No. 3415
GRINDING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Surface, Rotary Table Type			
3415-31	Horizontal, Spindle (Single or Duplex Rotary Table)	13	16.5
3415-32	Rail Type		
3415-33	Vertical, Single Spindle (Single or Duplex Rotary Table)		
3415-34	Vertical, Multiple Spindle		
3415-35	Full Automatic (Excludes Center Column Type 3415-37)		
3415-36	Combination Surface, Internal or External, Vertical Spindle, With or Without Side Head		
3415-37	Vertical, Multiple Spindle, Center Column Type, Automatic		
3415-38	Vertical, Radial Head (Includes Multiple Rotary Table)		
Surface, Reciprocating or Traveling Column Type			
3415-41	Reciprocating Table, Horizontal Spindle, Hand Feed	13	16.5
3415-42	Reciprocating Table, Horizontal Spindle, Power Feed		
3415-43	Reciprocating Table, Vertical Spindle		
3415-44	Reciprocating Table, Rail Type, Horizontal Spindle		
3415-45	Reciprocating Table, Rail Type, Vertical Spindle		
3415-46	Reciprocating, Wheel Head Type or Traveling Column (Traveling Wheel Head)		
3415-47	Taper Grinding and Polishing (Aircraft Skins) Abrasive Belt, Power Feed		
3415-59	Miscellaneous		
Disk			
3415-51	Horizontal, One Spindle, Hand Feed	13	16.5
3415-52	Horizontal, One Spindle, Power Feed		
3415-53	Horizontal, Two or More Spindles Opposed, Hand Feed		
3415-54	Horizontal, Two or More Spindles Opposed, Power Feed		
3415-55	Horizontal, Double End, Hand Feed		

PEC No. 3415
GRINDING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Disk (Cont)			
3415-56	Horizontal, Double End, Power Feed	13	16.5
3415-57	Vertical, Single Spindle		
3415-58	Vertical, Multiple Spindle (Includes Two Spindles Opposed)		
3415-59	Miscellaneous		
Thread, Thread and Form			
3415-61	Thread, External	13	16.5
3415-63	Thread, Internal		
3415-64	Thread and Form		
Tool and Cutter Grinders			
3415-71	Universal	13	16.5
3415-72	Broach		
3415-73	Drill		
3415-74	Single Point Tool		
3415-75	Shear and Knife		
3415-76	Face Mill		
3415-77	Saw		
3415-78	Special Tool and Cutter		
3415-79	Miscellaneous		
Bench, Floor and Snag			
3415-81	Bench, Double End	11	18.9
3415-82	Bench, Single End		
3415-83	Floor, Double End, Dry		
3415-84	Floor, Double End, Dry, Combination Drill		
3415-85	Floor, Single End, Wet, Tool		
3415-86	Floor, Double End, Wet, Tool		
3415-87	Floor, Combination Wet and Dry		
3415-88	Special		
3415-89	Miscellaneous		
Grinding Machines, Miscellaneous			
3415-91	Race Radius	13	16.5
3415-92	Spline (Not Including Gear & Spline)		
3415-93	Airfoil Form		

PEC No. 3415
GRINDING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Grinding Machines, Miscellaneous (Cont)			
3415-94	Profile, Template Type (Optical Projection, Pantograph, Dual Copy)	13	16.5
3415-95	Die and Jib		
3415-96	Plunge Form (Includes Airfoil Root; excludes Cylindrical)		
3415-98	Crushing and Dressing Machines (For Shaping Form Grinding Wheels)		
3415-99	Grinding Machines (Not Elsewhere Classified)		

PEC No. 3416
LATHES

Bench			
3416-11	Plain	12	17.6
3416-12	Screw Cutting		
3416-13	Bench, Automatic		
3416-14	Jewelers (Includes Watchmakers)		
3416-19	Miscellaneous		
Floor			
3416-21	Engine, Light Duty	13	16.5
3416-22	Toolroom, Light Duty		
3416-23	Engine, Medium (Standard) Duty		
3416-24	Engine or Toolroom, Medium (Standard Duty), Raised		
3416-25	Toolroom, Medium (Standard) Duty		
3416-26	Hollow Spindle (Excludes Gap Type)		
3416-27	Engine or Tool Room, Automatic Form Turning, Medium (Standard) Duty		
3416-28	Engine or Toolroom, Automatic Form Turning, (Standard Duty) Raised, Medium		
3416-29	Miscellaneous		
Heavy Duty			
3416-31	Engine	15	14.7
3416-32	Toolroom and Toolmakers		
3416-33	Manufacturing and Production, Multitool (Not Including Automatic)		

PEC No. 3416
LATHES (Cont)

		SVC LIFE YRS	CHART %
Heavy Duty (Cont)			
3416-34	Automatic, Form Turning (Not Including Chucking 3416-50; Between Centers Chucking 3416-60)	15	14.7
3416-35	Raised from Standard Swing		
3416-36	Gap Bed, Permanent Gap or Removable Block		
3416-37	Gap, Sliding Bed Type (Including Hollow Spindle)		
3416-38	Hollow Spindle, Not Including Boring		
3416-39	Miscellaneous		
Turret (Not Including Automatic Chucking)			
3416-41	Bench & Floor, Light Duty, with Turret Attachment	15	14.7
3416-42	Ram Type, Plain		
3416-43	Ram Type, Universal		
3416-44	Saddle Type, Fixed Center (Standard)		
3416-45	Saddle Type, Cross Sliding Turret		
3416-46	Miscellaneous		
Chucking (Including Form Turning)			
3416-51	Single Spindle, Horizontal, Automatic	11	18.9
3416-52	Single Spindle, Vertical, Automatic		
3416-53	Horizontal, Automatic, Multiple Spindle		
3416-54	Automatic, Multiple Spindle, Vertical (Includes Indexing Tables)		
3416-55	Right Angle Carriage, Automatic		
3416-56	Right Angle Carriage, Nonautomatic		
3416-59	Miscellaneous		
Automatic, Between Centers Chucking (Including Form Turning)			
3416-61	Horizontal, Single Spindle	11	18.9
3416-62	Vertical, Single Spindle		
3416-69	Miscellaneous		
Bar Automatic Screw Machines			
3416-71	Horizontal, Single Spindle	14	15.5
3416-73	Horizontal, Three or Four Spindles		

PEC No. 3416
LATHES (Cont)

		SVC LIFE YRS	CHART %
Bar Automatic Screw Machines (Cont)			
3416-74	Horizontal, Five Spindles	14	15.5
3416-75	Horizontal, Six Spindles		
3416-76	Horizontal, Eight Spindles		
Boring and Combination Boring and Turning Lathes			
3416-81	Single End, Boring Only	14	15.5
3416-82	Double End, Boring Only		
3416-83	Combination Boring and Turning, Single or Double End (Except Hollow Spindles)		
3416-84	Double End, Center Drive, Profile Facing		
3416-85	Hemispherical or Modified Hemispherical Contouring		
3416-89	Miscellaneous		
Lathes, Miscellaneous			
3416-91	Axle (Including Car Wheel, Burnishing and Journal Truing)	14	15.5
3416-92	Crankshaft (Includes Crankpin) or Camshaft Universal or Automatic		
3416-93	Shell (Projectile) Bullet, Bullet Jacket (Includes Combination Bullet Jacket & Cartridge Case Trimming and/or Head Finishing)		
3416-94	Cartridge Case Trimming and Head Finishing		
3416-95	Spinning (Includes Gap Types)		
3416-96	Relieving		
3416-99	Lathes (Not Elsewhere Classified)		

PEC No. 3417
MILLING MACHINES

Bench Type			
3417-11	Horizontal, Plain, Hand Feed	12	17.6
3417-12	Horizontal, Plain, Power Feed		
3417-13	Horizontal, Universal, Hand Feed		
3417-14	Horizontal, Universal, Power Feed		
3417-15	Vertical, Hand Feed		
3417-16	Vertical, Power Feed		
3417-19	Miscellaneous		

PEC No. 3417
MILLING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Knee Type (Except Bench Type)			
3417-21	Horizontal, Plain	14	15.5
3417-22	Horizontal, Universal		
3417-23	Vertical		
3417-24	Automatic and Manufacturing		
3417-26	Combination Horizontal & Vertical		
3417-29	Miscellaneous		
Ram Type			
3417-31	Swivel Head, Plain Table	14	15.5
3417-32	Swivel Head, Universal Table		
3417-33	Duplex, Vertical Spindles		
3417-34	Traversing Saddle (Excludes Ram Type Boring, Drilling & Milling Machines)		
3417-39	Miscellaneous		
Bed Type			
3417-41	Plain, Standard, Horizontal Spindle	13	16.5
3417-42	Plain, Rise & Fall, Horizontal Spindle (Including Tracer Control)		
3417-43	Duplex, Standard, Horizontal Spindles		
3417-44	Duplex, Rise & Fall, Horizontal Spindles (Including Tracer Control)		
3417-45	Vertical Spindle, Standard		
3417-46	Bridge Type, Fixed Height Rail		
3417-47	Adjustable Rail Type (Not Including Planer Type)		
3417-49	Miscellaneous		
Planer Type			
3417-51	Double Housing	17	13.3
3417-52	Openside (Includes Keyway Milling Machines)		
3417-53	Combination Milling & Planing, Double Housing		
3417-54	Combination Milling & Planing, Openside		
3417-59	Miscellaneous		

PEC No. 3417
MILLING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Profiling & Duplicating			
3417-61	Horizontal Spindle(s), Traveling Table Type	13	16.5
3417-62	Horizontal Spindle(s), Traveling Housing Type		
3417-63	Vertical Spindle(s), Bed Type		
3417-64	Vertical Spindle, Knee Type		
3417-65	Vertical Spindle, Rotary Type		
3417-66	Air Frame Skin		
3417-68	Air Frame, Spar		
3417-69	Miscellaneous		
Die Sinking			
3417-71	Plain	13	16.5
3417-72	Universal		
3417-79	Miscellaneous		
Thread			
3417-81	External Only	17	13.3
3417-82	Universal (Not Including Automatic)		
3417-83	Universal, Automatic		
3417-84	Chucking, Automatic		
3417-86	Planetary		
3417-89	Miscellaneous		
Milling Machines, Miscellaneous			
3417-91	Spline	15	14.7
3417-92	Routers	13	16.5
3417-93	Turbine Blade, Airfoil	14	15.5
3417-94	Engraving Machines	13	16.5
3417-95	Drum Type	15	14.7
3417-96	Cam	15	14.7
3417-97	Traversing Column, Horizontal Spindle	14	15.5
3417-99	Milling Machines (Not Elsewhere Classified)	14	15.5

PEC No. 3418
PLANERS

		SVC LIFE YRS	CHART %
Double Housing			
3418-11	Mechanical, Standard	18	12.7
3418-12	Mechanical, Widened		
3418-13	Hydraulic, Standard		
3418-16	Die Block		
3418-17	Frog and Switch		
3418-18	Double Cut		
Openside			
3418-21	Mechanical, Standard	18	12.7
3418-22	Hydraulic, Standard		
3418-24	Convertible		
3418-25	Shaper-Planer		
3418-26	Double Cut		
Plate			
3418-31	Edge Only	18	12.7
3418-32	Edging and Scarfing		
3418-39	Miscellaneous		
3418-40	Breast		
3418-50	Pit		
3418-60	Post		
3418-70	Rotary		
3418-99	Planers (Not Elsewhere Classified)		

PEC No. 3419
MISCELLANEOUS MACHINE TOOLS

Shapers & Slotters, Not Including Gear Shapers			
3419-11	Horizontal, Mechanical, Plain	15	14.7
3419-12	Horizontal, Mechanical, Universal	15	14.7
3419-13	Horizontal, Hydraulic	15	14.7
3419-14	Horizontal, Draw Cut	15	14.7
3419-15	Horizontal, Draw Cut, Combination Boring and Drilling	15	14.7
3419-17	Vertical, Mechanical	18	12.7
3419-18	Vertical, Hydraulic	18	12.7
3419-19	Miscellaneous	16	14

PEC No. 3419
MISCELLANEOUS MACHINE TOOLS (Cont)

		SVC LIFE YRS	CHART %
Honing and Lapping Machines (Not Including Gear Honing and Lapping)			
3419-21	Honing, Internal, Horizontal	12	17.6
3419-22	Honing, Internal, Vertical		
3419-23	Honing Machine, External (Horizontal or Vertical)		
3419-24	Combination Boring & Honing		
3419-25	Lapping, Flat Surface Only	15	14.7
3419-26	Lapping, Cylindrical Only		
3419-27	Lapping Combination Flat Surface & Cylindrical		
3419-28	Combination Honing & Lapping Machine (Including Superfinishing)		
3419-29	Miscellaneous		
Polishing-Buffing-Grinding Machines			
3419-31	Polishing and Buffing Machine, Bench Type	11	18.9
3419-32	Polishing and Buffing Machine, Floor Type		
3419-33	Speed Lathes		
3419-34	Abrasive Belt and/or Disk and/or Drum (Includes Polishing-Buffing-Grinding)		
3419-35	Swing Frame (Includes Polishing-Buffing-Grinding)		
3419-36	Plate and/or Sheet Metal (Includes Polishing-Buffing-Grinding)		
3419-37	Polishing Machine, Tube		
3419-38	Unit Head(s) (Includes Polishing-Buffing-Grinding)		
3419-39	Miscellaneous		
Cut-Off Machines (Includes Abrasive Type)			
3419-11	Sawing Machine, Hack	15	14.7
3419-42	Cut-Off Machine, Circular Saw		
3419-43	Cut-Off Machine, Abrasive Disk		
3419-44	Cut-Off Machine, Band Saw, Vertical		
3419-45	Cut-Off Machine, Band Saw, Horizontal		
3419-46	Cut-Off Machine, Friction Saw		
3419-47	Cut-Off Machine, Lathe Type		
3419-48	Cut-Off Machine, Pipe and/or Tube		
3419-49	Miscellaneous		

PEC No. 3419
MISCELLANEOUS MACHINE TOOLS (Cont)

		SVC LIFE YRS	CHART %
Sawing and/or Filing Machines (Excludes Cut-Off Saws 3419-40, Includes Saw Setting Machines			
3419-51	Contour Band Sawing	12	17.6
3419-52	Contour Band Filing		
3419-53	Combination Contour, Band Sawing and Filing Machines		
3419-54	Ram Type Filing Machines		
3419-55	Combination Ram Type Saw & Filing Machine		
3419-56	Circular Saw Blade Filing and/or Setting Machine		
3419-57	Band Saw Blade Filing and/or Setting Machine		
3419-58	Combination Hack, Band & Circular Saw Blade Filing Machines		
3419-59	Miscellaneous		
Tapping Machines			
3419-61	Vertical, Standard	13	16.5
3419-62	Vertical, Multiple Spindle, Fixed Centers		
3419-63	Vertical, Multiple Spindle, Adjustable Joint		
3419-64	Horizontal		
3419-65	Radial Arm		
3419-66	Nut		
3419-67	Pipe Fitting (Includes Coupling & Bushing Tapping & Combination Tapping & Threading)		
3419-68	Shell		
3419-69	Miscellaneous		
Threading Machines (Not Including Thread Grinding or Milling)			
3419-71	Bolt, Rotary Die (Includes Lead Screwtype)	13	16.5
3419-72	Combination Pipe & Bolt		
3419-73	Pipe (Includes Threading & Cut Off)		
3419-74	Pipe & Nipple		
3419-75	Single Point (Lathe Type)		
3419-79	Miscellaneous		

PEC NO. 3419
MISCELLANEOUS MACHINE TOOLS (Cont)

		SVC LIFE YRS	CHART %
Rifle Working Machines (Not Including Deep Hole Drilling)			
3419-81	Rifle Reaming	14	15.5
3419-82	Rifle, Horizontal, One Spindle		
3419-88	Rifle, Chamfering		
Miscellaneous (Including Way Type for Special Application and Combination Machines)			
3419-91	Centering Machines	15	14.7
3419-92	Keyseating Machines	18	12.7
3419-93	Pointing, Chamfering, Shaving, Facing, Grooving, Reaming, Burring, Counter Sinking, Forming & Drilling Machines (Not Including Gear Machinery)	12	17.6
3419-95	Reaming Machines (Not Including Rifle Reaming)	13	16.5
3419-96	Way Type Machines (For Special Application Boring, Broaching, Drilling, Grinding, Turning, Milling, Tapping, Reaming, Counterboring, etc.)	15	14.7
3419-97	Screw & Nut Slotting Machines	13	16.5
3419-98	Electro Erosion Machine	15	14.7
3419-99	Machine Tools (Not Elsewhere Classified)	12	17.6

PEC No. 3441
BENDING AND FORMING MACHINES

Bending Rolls, Sheet and Plate, Power Driven			
3441-11	Slip, Pyramid and Initial Type Roll	17	13.3
3441-12	Pinch Type Roll, Fixed Housing		
3441-13	Strongback Rolls		
3441-14	Wrapping Rolls		
3441-15	Straightening or Leveling Rolls		
3441-17	Corrugating Roll		
3441-18	Vertical Plate Rolls		
3441-19	Miscellaneous		
Bending Rolls, Sheet and Plate, Hand Operated			
3441-21	Slip, Pyramid and Initial Type Roll	17	13.3

PEC No. 3441
BENDING AND FORMING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Bending Rolls, Angles, Bars, Shapes and Pipe			
3441-31	Horizontal, Angles, Bars and Shapes	14	15.5
3441-32	Horizontal, Bars and Shapes (Not Including Angles)		
3441-33	Horizontal, Bars and Pipe Only		
3441-34	Vertical, Angles, Bars and Shapes		
3441-35	Vertical, Bars & Shapes (Not Including Angles)		
3441-36	Vertical, Bars and Pipe Only		
3441-37	Straightening Rolls		
3441-38	Angle Beveling Rolls		
3441-39	Miscellaneous		
Bending Brakes and Folders, Power Driven			
3441-41	Press Brakes	12	17.6
3441-42	Apron Brakes		
3441-43	Box and Pan Brakes		
3441-44	Bar, Pipe and Sheet Folders		
3441-46	Tangent Bending & Folding Machines		
3441-49	Miscellaneous		
Bending Brakes and Folders, Hand or Foot Operated			
3441-51	Press Brake	15	14.7
3441-52	Apron Brakes		
3441-53	Box and Pan Brakes		
3441-54	Bar, Pipe and Sheet Folders		
3441-55	Combination Folders & Brakes		
3441-59	Miscellaneous		
Rotary Bending and Forming Machines, Power-Driven			
3441-61	Bending Only	14	15.5
3441-62	Flanging Only		
3441-63	Setting Down		
3441-64	Seam Closing		
3441-65	Single Purpose or Combination (Burring, Edging, Turning & Wiring)		
3441-66	Combination Crimping & Beading		
3441-67	Combination Beading & Flanging		
3441-68	Combination of Five or More Operations		
3441-69	Miscellaneous		

PEC No. 3442
HYDRAULIC AND PNEUMATIC PRESSES (Cont)

		SVC LIFE YRS	CHAF %
Hydraulic, Vertical, Triple Action			
3442-31	Straight Sided, Housing Type (Forming, Flanging, Straightening & Forging)	17	13.
3442-32	Open Rod, Four Column (Forming, Flanging, Straightening & Forging)		
Hydraulic, Horizontal, Single Action			
3442-41	Tie Bar Type (Forcing, Assembling, Bending & Straightening)	17	13.
3442-42	Open Rod Type (Drawing & Extruding)		
3442-43	"C" Frame (Bulldozers)(Straightening, Bending, Forcing & Forging)		
3442-44	Horizontal, Rotating, Indexing Table		
3442-45	Horizontal, Two Cylinder Opposed (Drawing, Tapering & Cupping)		
3442-49	Miscellaneous		
Hydraulic, Combination Horizontal & Vertical			
3442-51	Housing Type (Forming, Bending & Forging)	17	13.
3442-52	Open Rod Type		
3442-53	"C" Frame Type (Joggling, Flanging, Bending and Straightening)		
3442-59	Miscellaneous		
Pneumatic Presses, Not Including Hydro-Pneumatic			
3442-63	"C" Frame Type	17	13.
3442-64	Quenching Type		
	lized Hydraulic & Pneumatic		
	ress, Hydraulic rming Machines, Stretching, ble Die (Fluid Die) umatic Presses (Not ssified)	17	13.

PEC No. 3443
PRESSES, MECHANICAL POWER

		SVC LIFE YRS	CHART %
Inclinable, Single Action (Punching, Blanking, Forming and Light Embossing)			
3443-11	Single Crank	13	16.5
3443-12	Double Crank		
Vertical, Straight Sided & Arch Frame, Single Action (Embossing, Drawing, Forming, Stamping & Trimming)			
3443-21	One Point, Single Crank, Single Eccentric or Crankless	12	17.6
3443-22	Two Point, Double Crank, Double Eccentric or Crankless (Not Including Bulldozers 3443-70-00)		
3443-23	Four Point, Crank, Eccentric & Crankless		
3443-24	One Point, Toggle or Knuckle Joint		
3443-27	Friction Drive, Screw Feed Press		
Vertical Gap or "C" Frame, Single Action (Punching, Stamping, Forming, Blanking & Horning)			
3443-31	Single Crank, End Wheel, Not Including Horn Presses (3443-35) or Sprue Cutters (3445-81-00)	16	14
3443-32	Single Crank, Side Wheel, Not Including Horn Presses (3443-35) or Sprue Cutters (3445-91-00)		
3443-33	Double Crank, Not Including Bulldozers (3443-70-00)		
3443-35	Horn Presses, Not including Adjustable Bed and Horn Presses (3443-40-00)		
3443-37	Friction Drive, Screw Feed Press		
Vertical, Adjustable Bed & Horning, Single Action (Punching, Horning & Riveting) Not Including Horn Presses (3443-35-00)			
3443-41	Single Crank, End Wheel	16	14
3443-42	Single Crank, Side Wheel		

PEC No. 3443
PRESSES, MECHANICAL POWER (Cont)

		SVC LIFE YRS	CHART %
Double & Triple Action (Drawing, Forming & Stamping)			
3443-51	Inclinable	15	14.7
3443-52	Vertical, Straight Sided, Single Crank Cam & One Point Crankless		
3443-53	Vertical, Straight Sided, Single Crank Toggle		
Vertical, Adjustable Bed & Horning, Single Action (Punching, Horning, and Riveting) Not Including Horn Presses (3443-35-00)(Cont)			
3443-54	Vertical, Straight Sided, Double Crank Cam & Two Point Crankless	15	14.7
3443-55	Vertical, Straight Sided, Double Crank, Toggle		
3443-56	Vertical, Straight Sided, Four Point		
3443-57	Vertical, Gap or "C" Frame, Single or Double Crank Cam		
Horizontal (Excluding Bulldozer Type)			
3443-61	Straight Sided, Single or Double Crank, Toggle or Eccentric	18	12.7
3443-62	Gap or "C" Frame, Single Crank		
3443-69	Miscellaneous		
Bulldozers			
3443-71	Horizontal	18	12.7
3443-72	Vertical		
3443-91	Rotary Die Type (Light Punching, Stamping and Embossing)		
3443-92	Multiple Plunger (Including Eyeletting Machines)		
3443-93	Pull Down Punching & Stamping (Dieing)		
3443-94	Multiple Transfer, Automatic		
3443-99	Mechanical Presses, Not Including Manually Operated Presses (3444-00-00)(Not Elsewhere Classified)		

PEC No. 3444
MANUAL PRESSES (ARBOR STRAIGHTENING, FORCING AND ASSEMBLY)

		SVC LIFE YRS	CHART %
Rack & Pinion Drive			
3444-11	Vertical, Straight Sided & Arch Frame (Including Straight Sided with Side Press)	18	12.7
3444-12	Vertical, Gap or "C" Frame, Bench Type		
3444-13	Vertical, Gap or "C" Frame, Floor Type		
Hydraulic			
3444-21	Vertical, Straight Sided, Including Straight Sided with Side Press	18	12.7
3444-22	Vertical, Gap or "C" Frame, Arbor		
3444-24	Open Rod, Two Column, Moving Up		
3444-29	Miscellaneous		
Screw Type, Floor and Bench			
3444-31	Vertical, Straight Sided and Arch Frame, Including Straight Sided with Side Press	18	12.7
3444-32	Vertical, Gap or "C" Frame		
3444-39	Miscellaneous		
Foot or Kick Presses			
3444-41	Bench Type	18	12.7
3444-42	Floor Type		
3444-99	Manual Presses (Not Elsewhere Classified)		

PEC No. 3445
PUNCHING AND SHEARING MACHINE

Punching Machines, Power Driven			
3445-11	Single End, Vertical (Including Combination Punch & Shear)	18	12.7
3445-12	Double End, Vertical (Including Combination Punch & Shear)		
3445-13	Horizontal		
3445-14	Multiple Straight Line, Housing Type		
3445-15	Turret Type		
3445-16	Beam Punch, Single End		

PEC No. 3445
PUNCHING AND SHEARING MACHINE (Cont)

		SVC LIFE YRS	CHART %
Punching Machines, Hand Operated			
3445-21	Single End (Including Combination Punch & Shear)	18	12.7
3445-22	Multiple Straight Line, Housing Type		
3445-23	Turret Type		
Plate Shears, Power Driven			
3445-31	Single End, Vertical	18	12.7
3445-32	Squaring and Gate Type		
3445-33	Slitting (Not Including Rotary Type 3445-70-00)		
3445-35	Throatless Type, Straight Blade		
3445-39	Miscellaneous		
Plate Shears, Hand or Foot Operated			
3445-41	Squaring	18	12.7
3445-42	Slitting (Not Including Rotary Type 3445-70-00)		
3445-44	Throatless Type, Straight Blade		
Bar And Angle Shears, Power Driven			
3445-51	Bar, Single End	18	12.7
3445-53	Angle, Single		
3445-54	Angle, Double		
3445-55	Bar & Billet (Guillotine or Housing Type)		
3445-56	Alligator		
3445-57	Universal (Bar, Angle & Slitting)		
3445-58	Combination Angle & Bar		
Bar and Angle Shears, Hand Operated			
3445-61	Bar	18	12.7
3445-62	Angle		
3445-64	Combination Angle and Bar		
Rotary Shears			
3445-71	Circle, Power Driven	18	12.7
3445-72	Circle, Hand Operated		

PEC No. 3445
PUNCHING AND SHEARING MACHINES (Cont)

		SVC LIFE YRS	CHART %
Rotary Shears (Cont)			
3445-73	Slitting, Single Disk, Power Driven	18	12.7
3445-74	Slitting, Single Disk, Hand Operated		
3445-75	Slitting, Gang Disk (Not Including Rolling Mill Type)		
3445-76	Circle Shear & Flange		
3445-77	Throatless, Disk Type, Power Driven		
3445-78	Throatless, Disk Type, Hand Operated		
Combination Machines with Built-In Devices			
3445-81	Punch, Shear and Coper (Universal Iron Worker)	18	12.7
3445-82	Punch & Bender, Double End, Horizontal		
3445-83	Punch with Built-In Bar Shear, Power Driven		
3445-84	Punch with Built-In Bar Shear, Hand Operated		
3445-86	Punch with Built-In Slitting Shear Hand Operated		
3445-91	Sprue Cutters	21	11.3
3445-92	Nibbling Machines	18	12.7
3445-99	Punching & Shearing Machines (Not Elsewhere Classified)	21	11.3

PEC No. 3446
FORGING MACHINERY AND HAMMERS
(NOT INCLUDING FORGING PRESSES)

Hammers, Steam or Air			
3446-11	Single Frame, Guided Ram	18	12.7
3446-12	Double Frame, Guided Ram		
3446-15	Steam or Air Drop		
3446-16	Pneumatic, Self Contained		
3446-17	Impact Stamping (Sheet Plate Forming)		
3446-19	Miscellaneous		
Hammers, Mechanical			
3446-21	Board Drop	14	15.5
3446-22	Helve		

PEC No. 3446
FORGING MACHINERY AND HAMMERS (NOT INCLUDING FORGING PRESSES)(Cont)

		SVC LIFE YRS	CHART %
Hammers, Mechanical (Cont)			
3446-23	Upright Helve	14	15.5
3446-24	Upright Strap		
3446-25	Crank (Includes Bumping & Planishing)		
3446-27	Rope Drop		
3446-29	Miscellaneous		
Forging Machines			
3446-31	Heading & Upsetting, Hot	14	15.5
3446-32	Heading or Trimming, Cold (Including Wire Nail Machines)		
3446-33	Nut		
3446-34	Forging Rolls		
3446-35	Swaging, Rotary Type (Includes Cage & Oscillating Type)		
3446-39	Miscellaneous		
Bending & Forming, Hot			
3446-41	Single Slide	18	12.7
3446-91	Hammers, Forging, Double Frame, Counter Blows (Steam or Air)	15	14.7

PEC No. 3447
WIRE & METAL RIBBON FORMING MACHINES (NOT INCLUDING ROLL FORMING)(CODE 3441-96-00)

Press Type			
3447-11	Single Slide	16	14
3447-12	Multi-Slide		
3447-14	Staple Forming Machines		
3447-15	Combination Wire Chain Forming & Hooking Machines		
3447-16	Wire Chain Twisting Machines		
Coiling			
3447-21	Spring, Universal	16	14
3447-22	Helical Spring		

PEC No. 3447
WIRE & METAL RIBBON FORMING MACHINES (NOT INCLUDING ROLL FORMING)(CODE 3441-96-00)(Cont)

		SVC LIFE YRS	CHART %
Coiling (Cont)			
3447-23	Torsion Spring	16	14
3447-24	Oval, Rectangular or Square Spring		
3447-25	Combination Spring Coiling & Knotting (Looping) Machines		
3447-26	Flexible Casing & Flexible Tube Coiling (Not Including Cable Armor Coiling)		
3447-27	Cable Armor		
3447-28	Spring, Rectangular or Square Stock		
3447-29	Miscellaneous		
Wire Spring Hooking and Knotting			
3447-31	Looping	16	14
3447-32	Combination Hooking & Cut-Off		
Straightening & Cut-Off (Not Including Machine Attachments)			
3447-41	Cut-Off (Not Including Combination Hooking & Cut-Off)	16	14
3447-42	Straightening Only		
3447-43	Combination Straightening & Cut-Off		
3447-44	Combination Straightening & Bundling		
Wire Weaving			
3447-51	Cloth	16	14
Wire & Metal Ribbon Forming Machines, Miscellaneous			
3447-91	Wire Spring Setting	16	14
3447-92	Combination Wire Bail Forming & Hooking		
3447-93	Wire Ring Forming		

PEC No. 3448
RIVETING MACHINES AND/OR DIMPLING MACHINES

		SVC LIFE YRS	CHART %
Squeeze Type (Not Including Magazine (Automatic) Rivet Feed)			
3448-11	Pneumatic	12	17.6
3448-12	Hydro-Pneumatic		

PEC No. 3449
MISCELLANEOUS SECONDARY METALFORMING
& CUTTING MACHINES (Cont)

	SVC LIFE YRS	CHART #
Roll Forming Machines (Rotary Extrusion)		
3449-71 Horizontal 3449-72 Vertical 3449-92 Metal Lathe Machines	15	14.7

(Note. These figures are not to be construed as actual life expectancy of the equipment, which may vary widely in some instances from those shown. They are arbitrary figures established for use within DOD to achieve standardization in computation of replacement analyses.)

PART 3

*CHART PERCENTAGE TABLE

SERVICE LIFE (Years)	CHART PERCENT	SERVICE LIFE (Years)	CHART PERCENT
5	35.6	21	11.3
6	30.9	22	10.9
7	27.3	23	10.5
8	24.5	24	10.2
9	22.3	25	9.9
10	20.4	26	9.6
11	18.9	27	9.3
12	17.6	28	9.1
13	16.5	29	8.9
14	15.5	30	8.7
15	14.7	31	8.4
16	14.	32	8.2
17	13.3	33	8.1
18	12.7	34	7.9
19	12.2	35	7.8
20	11.7		

*This chart percentage represents percentage (of dollars) of the net investment of an item of equipment based on its expected service life in years.